

CLAIMS

1. Device for controlling correct hooking of two sheet pile locks (10,12), wherein the first lock (10) comprises a locking chamber (14) into which a complementary lock part (16) of said second lock (12) penetrates, comprising:
- 5 a detector (18) arranged in said locking chamber (14) of said first lock (10) in such a manner that when the two locks (10,12) are correctly hooked, said complementary lock part (16) of said second lock (12) shears said detector;
- 10 an electric circuit for determining that said detector (18) has been sheared ;
- characterised in that**
- said electric circuit in the detector comprises a circuitry (28,28'), which presents a first impedance value prior to said shearing of said detector (18)
- 15 and a second impedance value after said shearing of said detector (18), wherein the two impedance values differ substantially from the impedance value of a short circuit respectively of an interruption of said electric circuit outside of said circuitry.
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2. Device according to claim 1, characterised in that
- said detector (18) comprises one end (24) made from a ferro-magnetic material which is arranged in said locking chamber (14) of said first lock (10) in such a manner that when said two locks (10, 12) are correctly
- 25 hooked, it is detached from the remainder of said detector (22) by the complementary lock part (16) of the second lock (12), and
- the circuitry in the remainder of the detector (22) comprises an inductive switch element of which the inductivity is altered by the detachment of the ferro-magnetic end (24).
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3. Device according to claim 1, characterised in that
said detector (18) comprises one end (24) with a permanent magnet (26)
which is arranged in the locking chamber (14) of said first lock (10) in such
a manner that when said two locks (10, 12) are correctly hooked, it is
5 sheared off from the remainder of the detector (22) by the complementary
lock part (16) of said second lock (12), and
said electric circuit in the remainder of the detector (22) comprises circuitry
(28) which responds to a change in the magnetic field which is caused by
the shearing off of the permanent magnet (26).
- 10 4. Device according to claim 3, characterised in that said circuitry (28) which
responds to the change in the magnetic field, comprises a magnetically
actuated microswitch (34) with parallel resistor (36) and series resistor
(38).
- 15 5. Device according to claim 1, characterised in that
said detector (18) comprises one end (24) which is arranged in said
locking chamber (14) of the first lock (10) in such a manner that when the
two locks (10, 12) are correctly hooked, it is sheared off from the
20 remainder of the detector (22) by the complementary lock part (16) of said
second lock (12), and
said electric circuit comprises a resistor circuitry (28') which comprises a
terminating resistor (R3) in the end to be sheared off of said detector.
- 25 6. Device according to claim 5, characterised in that said resistor circuitry
(28') in the remainder of said detector (22) comprises a first resistor (R1)
and a second resistor (R2), wherein said second resistor (R2) is connected
in series to said terminating resistor (R3) and said first resistor (R1) is
connected in parallel to the series circuit of terminating resistor (R3) and
30 second resistor (R2).

7. Device according to claim 5 or 6, characterised in that a diode (44) is connected directly in series to said resistor circuit (28') in such a manner that a direct current can flow through said resistor circuitry (28') only in one direction.
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8. Device according to any one of claims 4 to 6, characterised in that said terminating resistor (R3) in said detachable end (24) of said detector (18) and said resistor circuitry in said remainder of said detector (22) are connected to one another via two electrical conductors which form an electrical insulation layer relatively quickly in salt water.
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- 9.¹ Device according to any one of claims 5 to 8, characterised in that said resistor circuitry is arranged on a printed circuit board (50) which is subdivided by a perforation (52), wherein the terminating resistor (R3) is located on the one side and the remainder of the circuit is located on the other side of the perforation (52), and two conductors (54', 54'') lead between said bores of said perforation (52) connecting the terminating resistor (R3) to the remainder of the circuit.
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10. Device according to claim 9, characterised in that said two conductors (54', 54'') are fixed to said printed circuit board on both sides of said perforation (50) by soldering eyelets (56', 58' respectively 56'', 58'').
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11. Device according to any one of claims 1 to 10, characterised by an evaluation unit (32) which continuously measures at least one electrical parameter of the electric circuit and displays different states on the basis of the measured values.
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12. Device according to claim 11, characterised in that said evaluation unit (32) comprises an above-ground unit and a below-ground unit, wherein the below-ground unit, which is arranged in the immediate proximity of said detector respectively in said detector itself, comprises an active component
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group, which continuously measures at least one electrical parameter of said electric circuit, carries out a preliminary evaluation of this measurement and on the basis of this preliminary evaluation sends predetermined signals to said above-ground unit.

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13. Device according to claim 11 or 12, characterised in that said evaluation unit (32) measures the resistance value of the circuit and, after the occurrence of a change in resistance, checks this with reference to stability during a predetermined time.

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14. Device according to claim 10 or 11, characterised in that said electric circuit of the detector (18) comprises an electrical connecting lead (30) and said evaluation unit comprises at least displays for the following states:

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- a) detector is OK
- b) detector has been sheared
- c) connecting lead has been interrupted; and
- d) short circuit in the connecting lead.

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15. Device according to claim 14, characterised in that said evaluation unit (32) comprises additional displays for the following states:

- e) short circuit at the separation point of the detector; and
- f) measured resistance is unstable.

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16. Device according to any one of claims 1 to 15, characterised in that said detector (18) comprises a body which is subdivided by a predetermined breaking point (20) into a detector base (22) and a detector head (24), wherein said detector base (22) is attached to said first lock (10) and said detector head (24) projects in a cantilevered manner into said locking chamber (14) of said first lock (10).

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